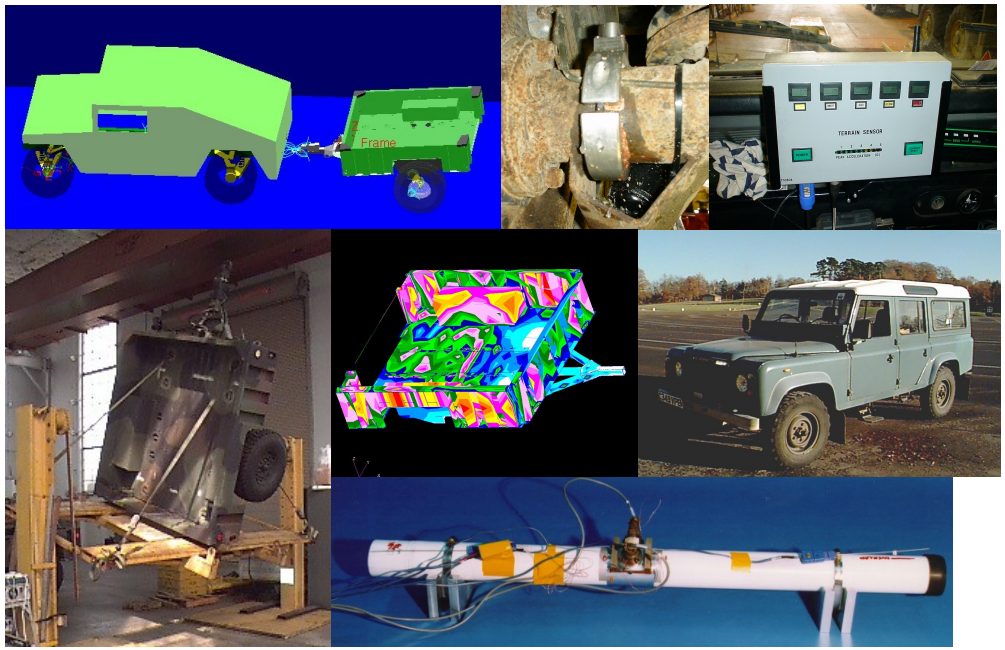
Physics of Failure-Based Approach to Life-Consumption Monitoring
JSA TP1 – Land Systems



1. A process based on real-time monitoring of vibration severity was developed to calculate life consumed or damage accumulated on a critical component of a US Army trailer.
2. A robust, efficient method that combines structural response and propellant capacity models with probability reliability algorithms was developed to quantify solid rocket motor service life.

Program Name: Physics of Failure-Based (PoF) Approach to Life-Consumption Monitoring

Objective: To demonstrate that state-of-the-art life-consumption monitoring can be used to predict failures in ground vehicles and weapons so that they can be repaired or replaced before the start of a mission.

Payoff: Increased equipment mission reliability and availability, which could potentially reduce sustainment costs by hundreds of millions of dollars.

Participants:

AM , TARDEC
AE a & Tenn.

Future Activities: Develop an overarching strategy for the application of PoF and prognostics to military equipment design, production, test, evaluation, and field support.

http://www.dtic.mil/